Saskatchewan
Agriculture
and Food

ADF

AGRICULTURE DEVELOPMENT FUND

FINAL REPORT

20040407

CALIBRATION OF MALTING QUALITY EVALUATION PARAMETERS

Funded by: The Agriculture Development Fund

April, 2006

Prepared by: University of Saskatchewan

2007-04786/

Final Report to Saskatchewan Agriculture and Food
ADF project # 20040407

Calibration of malting quality evaluation parameters.

B.L. Harvey and B.G. Rossnagel

February 13, 2006

Project:

The project funding was reduced from the amount requested, thus the focus was narrowed. The aims became twofold. (1) to bring the Joe White Micromalter and the Skalar flow analysis systems on line and (2) to calibrate the wet chemistry measurements with NIR spectroscopy.

The Joe White Micromalter as initially shipped did not meet CAE standards and thus had to be rewired to comply. This was done but took several months to complete. The second problem was failure of the supplier to remove packing keys from the main drive wheel and thus when it was started it stripped all of the gears. This also was repaired. Finally the water couplings were not the appropriate pressure fittings thus they burst and caused serious flooding. That too was resolved. Almost a year after the equipment arrived in Saskatoon we were able to start it up and make acceptable micromalts. The following regime is used. (It should be noted that we purposely undermalt to maximize genotypic differences.) (Insert program from Doreen here.)

The Skalar system also had start up problems and parts and program for the FAN line were several months coming from Europe. Our machine is set up with four lines to allow determination of malt β glucan, alpha amylase, diastatic power and free amino nitrogen. This system, while similar in principle to our old Technicon Autoanalyzer, requires more labor and stock solutions need to be refreshed every day. However, with much input from the Skalar technical assistants we got the system up and running.

We then analyzed malts which had been analyzed at other laboratories (Prairie Malt Limited and the Grain Research Laboratory of the Canadian Grain Commission) and found that our results were aligned well with results from these other labs. We also continued to use NIT for barley protein and moisture, a Friabilimeter for malt friability and our previous mash bath and densitometer for malt extract measurement.

We then began to utilize NIR analysis along with "wet chemistry" as described above to develop equations to predict values without actually conducting the wet analysis. Micromalts were made from 2800 lines and both wet chemistry and NIR measurements were carried out. The initial NIR equations and database were provided by Prairie Malt Limited. Correlations were then calculated between the values obtained by the two sets of measurements. Excellent correlations were obtained for protein and moisture. For other traits however the results were disappointing. Several possibilities will be pursued in an attempt to get better relationships between methods. (1) We will use a new NIR Spectrometer which has a broader spectrum than the one we were

using. (2). We will obtain a more up to date database for calculations and (3) We will up to date the equations (easier to do on the full spectrum unit) and a more regular basis.

We wish to thank SAF for their support for this project. We are confident that we will get improved correlations in future analysis and thus save time and expense in our malting quality analysis

File View Alarm Window Help

Process | Information | Recording | Exit

Steeping Process

Batch Name :T2 C5, T1C5, T2C2

Print Page

Perform Steeping Process		Air Flow		Ramp Duration	Temp	Plateau Duration
Steeping		Air	Recirc	0 hrs 0 mins	61.5 °C	3 hrs 59 mins
Wet Stage 1	Completed				17 °C	4 hrs 0 mins
Air Rest Stage 1	Completed	70 %	0 %	0 hrs 0 mins	17 °C	4 hrs 0 mins
Wet Stage 2	Completed				17 °C	4 hrs 0 mins
Air Rest Stage 2	Completed	70 %	0 %	0 hrs 0 mins	17 °C	4 hrs 0 mins
Wet Stage 3	Completed				17 °C	4 hrs 0 mins
Air Rest Stage 3	Completed	70 %	0 %	0 hrs 0 mins	17 °C	4 hrs 0 mins
Wet Stage 4	Completed				17 °C	4 hrs 0 mins
Air Rest Stage 4		0 %	0 %	0 hrs 0 mins	0 °C	0 hrs 0 mins
Wet Stage 5					0 °C	0 hrs 0 mins
Air Rest Stage 5		0 %	0 %	0 hrs 0 mins	0 °C	0 hrs 0 mins
Wet Stage 6					0 °C	0 hrs 0 mins
Air Rest Stage 6		0 %	0 %	0 hrs 0 mins	0 °C	0 hrs 0 mins

Automatic and Immediate Turns Completed: 29

24 HR and Immediate Backwashes Completed: 4

Aeration on During Wet Stages

Fan on but no Temp Control During Air Rest

Pause at End of Steeping Process

Automatic Turning | Time between Turns : 1 hrs 0 mins | Number of Half Rotations : 2 | Trim Angle : 0 °

start | 2 OptoDisR.EXE - O... | EN | 11:48 AM

File View Alarm Window Help

Process | Information | Recording | Exit

Batch Data Entry

Running

Event Log | Print Page

Save New Recipe | Open Existing Recipe

Alarm Dialler On

Set Alarm Dialler To Dial Out 24HRS A DAY

Batch Information and Details

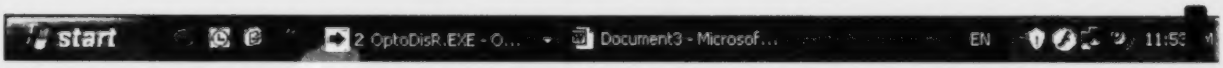
Batch Name	T2 C5, T1C5, T2C2		
Batch Short Desc.	6-ROW C5R#1228-1264, C5R#1303-1462, C2R#503-729		
Batch Delay	0 Hours	0 Mins	

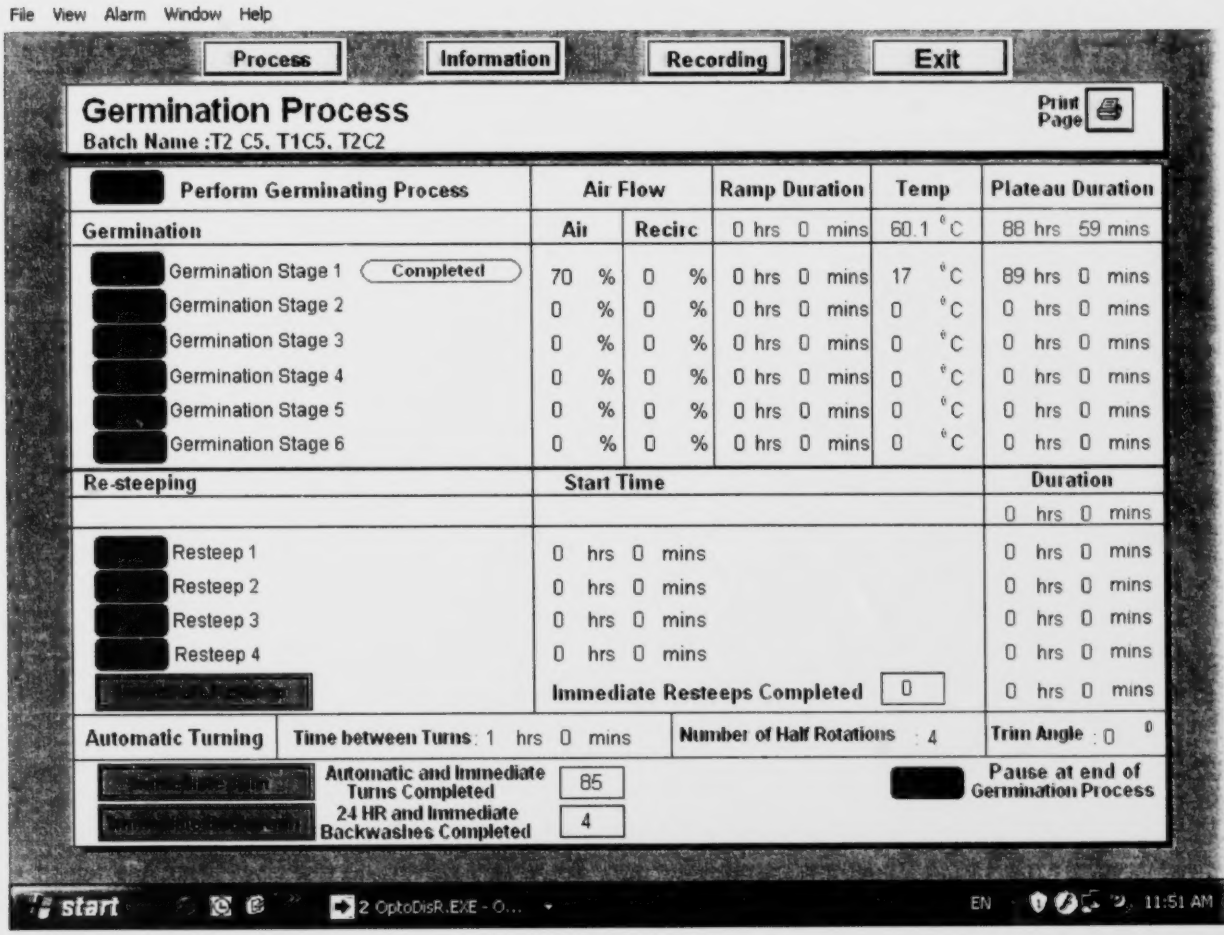
Batch Data

Grain Variety	21TH BATCH OF 2005 MALTING SAMPLES
Moisture	USING TRADITION AS 6-ROW CHECK
Total Nitrogen	

Experimental Description

1 START UP TIME 9:28 AM TUESDAY FEB 7/06
2 BATCH #21
3
4
5




File View Alarm Window Help
Process
Information
Recording
Exit
Germination Process
Batch Name :T2 C5, T1C5, T2C2
Print Page
Perform Germinating Process
Air Flow
Ramp Duration
Temp
Plateau Duration
Germination
Air
Recirc
0 hrs 0 mins
60.1 °C
88 hrs 59 mins
Germination Stage 1
Completed
70 % 0 % 0 hrs 0 mins 17 °C 89 hrs 0 mins
Germination Stage 2
0 % 0 % 0 hrs 0 mins 0 °C 0 hrs 0 mins
Germination Stage 3
0 % 0 % 0 hrs 0 mins 0 °C 0 hrs 0 mins
Germination Stage 4
0 % 0 % 0 hrs 0 mins 0 °C 0 hrs 0 mins
Germination Stage 5
0 % 0 % 0 hrs 0 mins 0 °C 0 hrs 0 mins
Germination Stage 6
0 % 0 % 0 hrs 0 mins 0 °C 0 hrs 0 mins
Re-steeping
Start Time
Duration
0 hrs 0 mins
Resteep 1
0 hrs 0 mins
0 hrs 0 mins
Resteep 2
0 hrs 0 mins
0 hrs 0 mins
Resteep 3
0 hrs 0 mins
0 hrs 0 mins
Resteep 4
0 hrs 0 mins
0 hrs 0 mins
Immediate Resteeps Completed
0
0 hrs 0 mins
Automatic Turning
Time between Turns : 1 hrs 0 mins
Number of Half Rotations : 4
Trim Angle : 0
Automatic and Immediate Turns Completed
85
24 HR and Immediate Backwashes Completed
4
Pause at end of Germination Process
start
2 OptoDisR.EXE - O...
EN
11:51 AM

File View Alarm Window Help

Process | Information | Recording | Exit

Kilning Process Running

Print Page

Batch Name :T2 C5, T1C5, T2C2

Perform Kilning		Air Flow		Ramp Duration (Default 5 Mins)	Temp	Optimum Temp Range	Plateau Duration
Kilning		**Air**	**Recirc**	0 hrs 5 mins	58.6 °C		9 hrs 38 mins
Kilning Stage 1	Completed	80 %	0 %	0 hrs 0 mins	49 °C	40-50 °C	10 hrs 0 mins
Kilning Stage 2	Completed	80 %	0 %	0 hrs 0 mins	49 °C	45-55 °C	3 hrs 0 mins
Kilning Stage 3	Completed	80 %	0 %	0 hrs 0 mins	54 °C	50-60 °C	4 hrs 0 mins
Kilning Stage 4		80 %	0 %	0 hrs 0 mins	60 °C	55-65 °C	10 hrs 0 mins
Kilning Stage 5		80 %	0 %	0 hrs 0 mins	80 °C	60-70 °C	13 hrs 0 mins
Kilning Stage 6		0 %	0 %	0 hrs 0 mins	0 °C	65-75 °C	0 hrs 0 mins
Kilning Stage 7		0 %	0 %	0 hrs 0 mins	0 °C	70-80 °C	0 hrs 0 mins
Kilning Stage 8		0 %	0 %	0 hrs 0 mins	0 °C	80-100 °C	0 hrs 0 mins

Do you wish to shut down on Total Set Time or Air Off Temperature?

Shutdown by Air Off Temp at : 0 °C **Duration after Air Off Temp reached :-** 0 hrs 0 mins

start | 2 OptoDisR.EXE - O... | Microsoft Word | EN

Filename:P04K-05
OCTOBER 18,2005

2005 PRELIM 4 KERNEN LOCATION 6-ROW 1-36 MALTED SAMPLES

Number	TP	MOIST	ALPHA	DP	SP	VISC	EXT	BGlu	FRIAB	PF
TRADITION-05	11.53	4.07	9.87	60.44	3.59	1.37	61.44	126.04	74.66	57.20
1-P04	12.39	4.12	10.82	110.54	4.09	1.29	60.58	143.00	77.38	57.15
2-P04	11.24	4.23	15.57	158.27	4.85	1.26	60.23	108.89	91.08	70.38
3-P04	10.24	4.09	14.65	120.70	4.37	1.30	60.33	103.32	96.72	69.61
4-P04	11.24	4.43	11.84	107.95	4.56	1.32	59.96	118.82	89.18	69.14
5-P04	11.90	4.28	10.42	79.30	4.12	1.33	62.86	121.73	80.31	62.70
6-P04	11.61	4.53	10.22	73.10	3.93	1.32	59.24	118.34	87.88	64.25
7-P04	11.30	4.28	10.51	76.50	3.97	1.34	60.68	115.76	83.29	63.21
8-P04	11.00	4.40	12.06	70.73	4.47	1.31	61.58	102.87	90.89	68.92
TRADITION-05	11.90	3.74	10.67	105.24	4.36	1.38	62.87	117.91	77.28	66.98
9-P04	10.31	3.88	12.30	63.96	4.42	1.31	61.36	93.85	102.61	75.53
10-P04	10.35	3.92	8.87	69.94	4.02	1.32	61.68	107.88	97.12	71.95
11-P04	10.87	4.11	10.22	124.97	4.34	1.28	58.97	95.51	102.45	71.72
12-P04	10.96	3.95	9.78	84.92	4.15	1.32	61.17	119.03	92.87	66.91
13-P04	11.25	3.75	11.22	141.00	4.58	1.34	60.88	113.18	89.80	67.17
14-P04	12.85	3.65	12.33	182.70	4.95	1.28	62.03	126.78	79.46	62.69
15-P04	12.02	3.69	11.46	183.54	4.77	1.30	59.26	115.89	86.26	59.08
16-P04	11.51	4.00	8.59	75.12	4.05	1.29	58.84	117.07	84.60	60.67
17-P04	11.31	3.69	15.71	111.97	5.26	1.28	61.16	107.59	90.01	73.20
18-P04	11.50	3.64	14.04	119.77	4.94	1.30	62.07	106.01	90.57	71.56
19-P04	11.25	3.75	13.31	171.91	5.09	1.24	60.95	119.51	96.61	75.54
20-P04	11.53	3.67	13.49	151.72	4.80	1.28	59.99	114.57	93.13	69.76
21-P04	10.78	3.70	13.15	126.07	4.64	1.30	61.64	106.51	98.61	73.55
22-P04	11.24	3.89	12.56	157.27	4.70	1.26	61.19	123.52	91.32	69.68
23-P04	10.59	3.69	13.69	130.53	4.51	1.32	63.23	108.94	93.61	71.28
24-P04	11.28	3.76	11.11	197.12	4.62	1.29	60.99	132.82	94.91	72.74
25-P04	11.23	3.38	14.29	126.65	4.90	1.31	63.15	112.97	91.94	73.55
26-P04	10.96	3.67	17.42	214.62	5.18	1.31	61.50	111.18	94.60	69.60
27-P04	10.65	3.78	11.78	153.20	4.43	1.33	63.43	109.42	97.12	70.69
28-P04	11.49	3.75	13.81	127.29	5.00	1.30	62.51	116.17	92.88	73.08
29-P04	11.60	3.76	14.23	159.20	4.61	1.29	59.76	122.18	92.14	67.89
30-P04	12.11	3.56	12.95	207.62	4.96	1.29	61.11	126.64	89.99	69.03
31-P04	12.11	3.84	14.20	224.36	5.15	1.25	60.30	119.68	89.98	69.08
32-P04	10.99	3.97	12.36	137.81	4.59	1.23	60.59	111.48	100.85	74.93
33-P04	11.08	3.82	13.00	149.03	4.62	1.29	61.79	120.85	92.45	72.87
34-P04	10.95	3.68	14.50	165.73	4.78	1.29	61.76	118.78	94.74	74.09
35-P04	11.89	3.76	13.78	186.05	4.82	1.27	61.01	116.73	91.80	68.24
36-P04	11.07	3.93	15.03	141.42	4.82	1.29	61.43	92.89	95.97	77.12
TRADITION-04	12.68	3.42	15.16	174.82	5.43	1.39	64.52	111.00	74.34	67.63

* Malted in two batches 1TRT# 1-8
TRT# 9-36

OCTOBER 18/05
KERNEN LOCATION

2005
PRELIM 4

Priority 1
6-ROW
MALTED

Number	DP			SP		ALPHA		EXT			VISC		B-gluc		CP			FRIAB		RkSum	GlobRk
TRADITION-05	11.53	27	27	3.59	39	9.87	36	61.44	16	16	1.37	37	126.04	35	60.44	39	39	74.66	38	349	38
1-P04	12.39	37	37	4.09	34	10.82	30	60.58	29	29	1.29	11	143.00	39	110.54	28	28	77.38	36	338	36
2-P04	11.24	16	16	4.85	11	15.57	3	60.23	32	32	1.26	4	108.89	10	158.27	12	12	91.08	22	170	9
3-P04	10.24	1	1	4.37	29	14.65	6	60.33	30	30	1.30	19	103.32	5	120.70	25	25	96.72	7	178	12
4-P04	11.24	16	16	4.56	24	11.84	25	59.96	34	34	1.32	28	118.82	27	107.95	29	29	89.18	29	291	32
5-P04	11.90	32	32	4.12	33	10.42	33	62.86	6	6	1.33	33	121.73	32	79.30	32	32	80.31	34	305	34
6-P04	11.61	30	30	3.93	38	10.22	34	59.24	37	37	1.32	28	118.34	25	73.10	35	35	87.88	30	359	39
7-P04	11.30	22	22	3.97	37	10.51	32	60.68	27	27	1.34	35	115.76	19	76.50	33	33	83.29	33	320	35
8-P04	11.00	12	12	4.47	26	12.06	24	61.58	14	14	1.31	24	102.87	4	70.73	36	36	90.89	23	225	27
TRADITION-05	11.90	32	32	4.36	30	10.67	31	62.87	5	5	1.38	38	117.91	24	105.24	30	30	77.28	37	294	33
9-P04	10.31	2	2	4.42	28	12.30	23	61.36	18	18	1.31	24	93.85	2	63.96	38	38	102.61	1	194	19
10-P04	10.35	3	3	4.02	36	8.87	38	61.68	12	12	1.32	28	107.88	9	69.94	37	37	97.12	5	220	26
11-P04	10.87	7	7	4.34	31	10.22	34	58.97	38	38	1.28	7	95.51	3	124.97	24	24	102.45	2	215	22
12-P04	10.96	9	9	4.15	32	9.78	37	61.17	20	20	1.32	28	119.03	28	84.92	31	31	92.87	16	261	30
13-P04	11.25	19	19	4.58	23	11.22	28	60.88	26	26	1.34	35	113.18	17	141.00	18	18	89.80	28	257	29
14-P04	12.85	39	39	4.95	8	12.33	22	62.03	9	9	1.28	7	126.78	37	182.70	7	7	79.46	35	219	24
15-P04	12.02	34	34	4.77	16	11.46	27	59.26	36	36	1.30	19	115.89	20	183.54	6	6	86.26	31	265	31
16-P04	11.51	26	26	4.05	35	8.59	39	58.84	39	39	1.29	11	117.07	23	75.12	34	34	84.60	32	338	36
17-P04	11.31	23	23	5.26	2	15.71	2	61.16	21	21	1.28	7	107.59	8	111.97	27	27	90.01	25	186	14
18-P04	11.50	25	25	4.94	9	14.04	11	62.07	8	8	1.30	19	106.01	6	119.77	26	26	90.57	24	187	15
19-P04	11.25	19	19	5.09	5	13.31	16	60.95	25	25	1.24	2	119.51	29	171.91	9	9	96.61	8	166	8
20-P04	11.53	27	27	4.80	14	13.49	15	59.99	33	33	1.28	7	114.57	18	151.72	15	15	93.13	14	218	23
21-P04	10.78	6	6	4.64	18	13.15	17	61.64	13	13	1.30	19	106.51	7	126.07	23	23	98.61	4	149	6
22-P04	11.24	16	16	4.70	17	12.56	20	61.19	19	19	1.26	4	123.52	34	157.27	13	13	91.32	21	192	18
23-P04	10.59	4	4	4.51	25	13.69	14	63.23	3	3	1.32	28	108.94	11	130.53	20	20	93.61	13	145	4
24-P04	11.28	21	21	4.62	19	11.11	29	60.99	24	24	1.29	11	132.82	38	197.12	4	4	94.91	10	205	20
25-P04	11.23	15	15	4.90	10	14.29	8	63.15	4	4	1.31	24	112.97	16	126.65	22	22	91.94	19	159	7
26-P04	10.96	9	9	5.18	3	17.42	1	61.50	15	15	1.31	24	111.18	14	214.62	2	2	94.60	12	106	1
27-P04	10.65	5	5	4.43	27	11.78	26	63.43	2	2	1.33	33	109.42	12	153.20	14	14	97.12	5	145	4
28-P04	11.49	24	24	5.00	6	13.81	12	62.51	7	7	1.30	19	116.17	21	127.29	21	21	92.88	15	177	11
29-P04	11.60	29	29	4.61	21	14.23	9	59.76	35	35	1.29	11	122.18	33	159.20	11	11	92.14	18	242	28
30-P04	12.11	35	35	4.96	7	12.95	19	61.11	22	22	1.29	11	126.64	36	207.62	3	3	89.99	26	219	24
31-P04	12.11	35	35	5.15	4	14.20	10	60.30	31	31	1.25	3	119.68	30	224.36	1	1	89.98	27	208	21
32-P04	10.99	11	11	4.59	22	12.36	21	60.59	28	28	1.23	1	111.48	15	137.81	19	19	100.85	3	178	12
33-P04	11.08	14	14	4.62	19	13.00	18	61.79	10	10	1.29	11	120.85	31	149.03	16	16	92.45	17	176	10
34-P04	10.95	8	8	4.78	15	14.50	7	61.76	11	11	1.29	11	118.78	26	165.73	10	10	94.74	11	128	2
35-P04	11.89	31	31	4.82	12	13.78	13	61.01	23	23	1.27	6	116.73	22	186.05	5	5	91.80	20	191	17
36-P04	11.07	13	13	4.82	12	15.03	5	61.43	17	17	1.29	11	92.89	1	141.42	17	17	95.97	9	132	3
TRADITION-04	12.68	38	38	5.43	1	15.16	4	64.52	1	1	1.39	39	111.00	13	174.82	8	8	74.34	39	190	16
MIN	10.24			3.59		8.59		58.84			1.23		93		60			74.34			
MAX	12.85			5.43		17.42		64.52			1.39		143		224			102.61			39
AVG	11.35			4.60		12.59		61.23			1.30		115		134			90.55			

MALTED IN TWO BATCHES TRT# 1-8
TRT# 9-36

FILE NAME: P05K-05
OCTOBER 19/05

2005 PRELIM 05 KERNEN LOCATION 1-36 6ROW MALTED SAMPLES

Number	TP	MOIST	ALPHA	DP	SP	VISC	EXT	BGlu	FRIAB	PF
TRADITION-05	11.89	3.76	10.58	106.33	4.40	1.37	62.09	126.13	72.54	61.91
1-P05	12.15	3.60	10.64	121.88	4.45	1.32	60.57	140.17	81.13	61.11
2-P05	10.91	3.75	15.41	140.22	4.67	1.27	60.75	108.02	95.15	72.22
3-P05	11.56	3.53	15.13	191.79	4.99	1.30	61.87	102.12	91.46	70.77
4-P05	11.51	3.38	11.84	140.29	4.54	1.29	61.42	127.08	85.82	68.54
5-P05	11.87	3.45	13.41	192.50	5.00	1.29	61.83	130.49	90.36	74.08
6-P05	10.99	3.77	14.99	151.67	4.87	1.30	59.10	105.27	96.13	72.51
7-P05	10.38	3.66	14.80	130.33	4.58	1.29	62.39	102.13	97.23	75.45
8-P05	11.57	4.02	10.35	114.50	4.28	1.26	60.04	122.43	93.01	64.92
9-P05	11.25	3.97	13.13	155.89	4.81	1.26	59.95	116.69	94.55	72.77
10-P05	11.21	3.91	13.56	170.52	5.04	1.25	61.44	117.41	100.19	75.70
11-P05	11.52	3.92	12.92	175.56	4.93	1.29	61.58	128.13	92.06	68.17
12-P05	10.98	3.58	15.66	161.60	4.83	1.30	62.44	116.00	95.50	71.75
13-P05	11.64	3.81	13.03	225.02	4.89	1.27	61.21	146.38	90.56	69.15
14-P05	11.95	3.79	14.20	234.86	4.91	1.28	61.93	133.38	90.31	66.20
15-P05	12.33	3.65	12.51	143.72	4.53	1.30	62.53	144.52	80.69	64.61
16-P05	11.27	3.73	14.47	111.78	4.54	1.30	64.14	109.85	95.11	69.67
17-P05	10.73	3.55	12.18	160.28	4.42	1.30	62.83	126.58	96.53	70.75
18-P05	11.20	3.88	16.28	195.54	4.73	1.26	60.64	125.59	96.28	73.09
19-P05	10.79	4.01	13.06	160.53	4.65	1.26	61.22	118.24	100.46	76.33
20-P05	10.26	3.64	15.10	119.64	4.48	1.32	62.67	106.31	101.18	72.44
21-P05	10.69	3.69	14.44	203.24	4.48	1.30	62.38	124.80	94.50	70.45
22-P05	11.81	4.04	14.01	242.06	5.10	1.25	61.28	123.47	96.43	73.88
23-P05	11.11	3.58	14.51	199.12	4.74	1.25	61.32	118.08	95.95	73.95
24-P05	10.43	3.60	15.49	159.36	4.53	1.25	61.46	105.50	98.49	74.39
25-P05	11.14	3.79	15.39	197.71	4.75	1.26	61.14	119.14	98.39	74.89
26-P05	11.76	3.78	15.71	210.14	5.27	1.22	60.93	109.93	96.07	74.79
TRADITION-05	11.71	3.81	11.13	75.67	4.10	1.41	62.69	117.03	71.94	62.32
27-P05	10.73	4.19	11.70	135.38	4.50	1.28	59.68	113.96	99.51	77.38
28-P05	11.07	3.95	13.34	160.69	4.64	1.27	60.74	108.84	97.17	75.03
29-P05	10.69	4.02	15.21	200.37	4.68	1.26	59.04	105.86	102.78	78.13
30-P05	11.25	4.17	11.67	123.15	4.42	1.29	59.49	123.28	91.87	71.21
31-P05	11.64	4.13	13.85	185.38	4.84	1.26	60.54	120.99	92.41	70.82
32-P05	10.72	4.11	13.91	114.85	4.58	1.24	59.32	112.57	98.15	76.34
33-P05	10.01	3.95	14.94	81.72	4.43	1.29	61.35	100.82	99.53	78.06
34-P05	10.94	3.76	15.41	187.14	4.90	1.28	60.07	106.02	100.00	75.61
35-P05	10.50	3.98	12.38	53.83	3.76	1.38	61.34	110.03	84.93	57.89
36-P05	12.20	4.06	12.07	191.17	4.54	1.23	60.64	146.48	96.26	72.85

OCTOBER 19/05
KERNEN LOCATION

2005
PRELIM 05

Priority 1
6-ROW
MALTED

Number	TP			SP		ALPHA		EXT			VISC		B-gluc		DP			FRIAB		RkSum	GlobRk
TRADITION-05	11.89	34	34	4.40	35	10.58	37	62.09	9	9	1.37	36	126.13	29	106.33	35	35	72.54	37	330	37
1-P05	12.15	36	36	4.45	31	10.64	36	60.57	29	29	1.32	34	140.17	35	121.88	30	30	81.13	35	361	38
2-P05	10.91	12	12	4.67	18	15.41	5	60.75	25	25	1.27	15	108.02	9	140.22	26	26	95.15	21	194	17
3-P05	11.56	26	26	4.99	5	15.13	9	61.87	11	11	1.30	27	102.12	2	191.79	11	11	91.46	29	168	12
4-P05	11.51	24	24	4.54	23	11.84	32	61.42	16	16	1.29	21	127.08	31	140.29	25	25	85.82	33	270	31
5-P05	11.87	33	33	5.00	4	13.41	22	61.83	12	12	1.29	21	130.49	33	192.50	10	10	90.36	31	221	25
6-P05	10.99	15	15	4.87	10	14.99	11	59.10	37	37	1.30	27	105.27	4	151.67	23	23	96.13	17	219	22
7-P05	10.38	3	3	4.58	21	14.80	13	62.39	7	7	1.29	21	102.13	3	130.33	28	28	97.23	11	145	3
8-P05	11.57	27	27	4.28	36	10.35	38	60.04	32	32	1.26	8	122.43	24	114.50	33	33	93.01	25	315	36
9-P05	11.25	21	21	4.81	13	13.13	24	59.95	33	33	1.26	8	116.69	17	155.89	22	22	94.55	23	237	28
10-P05	11.21	20	20	5.04	3	13.56	21	61.44	15	15	1.25	4	117.41	19	170.52	16	16	100.19	4	153	6
11-P05	11.52	25	25	4.93	6	12.92	27	61.58	13	13	1.29	21	128.13	32	175.56	15	15	92.06	27	219	22
12-P05	10.98	14	14	4.83	12	15.66	3	62.44	6	6	1.30	27	116.00	16	161.60	17	17	95.50	20	152	4
13-P05	11.64	28	28	4.89	9	13.03	26	61.21	22	22	1.27	15	146.38	37	225.02	3	3	90.56	30	223	26
14-P05	11.95	35	35	4.91	7	14.20	17	61.93	10	10	1.28	18	133.38	34	234.86	2	2	90.31	32	202	20
15-P05	12.33	38	38	4.53	26	12.51	28	62.53	5	5	1.30	27	144.52	36	143.72	24	24	80.69	36	287	33
16-P05	11.27	23	23	4.54	23	14.47	15	64.14	1	1	1.30	27	109.85	11	111.78	34	34	95.11	22	214	21
17-P05	10.73	9	9	4.42	33	12.18	30	62.83	2	2	1.30	27	126.58	30	160.28	20	20	96.53	13	195	18
18-P05	11.20	19	19	4.73	16	16.28	1	60.64	27	27	1.26	8	125.59	28	195.54	9	9	96.28	15	178	14
19-P05	10.79	11	11	4.65	19	13.06	25	61.22	21	21	1.26	8	118.24	21	160.53	19	19	100.46	3	178	14
20-P05	10.26	2	2	4.48	29	15.10	10	62.67	4	4	1.32	34	106.31	8	119.64	31	31	101.18	2	157	7
21-P05	10.69	6	6	4.48	29	14.44	16	62.38	8	8	1.30	27	124.80	27	203.24	5	5	94.50	24	161	11
22-P05	11.81	32	32	5.10	2	14.01	18	61.28	20	20	1.25	4	123.47	26	242.06	1	1	96.43	14	170	13
23-P05	11.11	17	17	4.74	15	14.51	14	61.32	19	19	1.25	4	118.08	20	199.12	7	7	95.95	19	158	9
24-P05	10.43	4	4	4.53	26	15.49	4	61.46	14	14	1.25	4	105.50	5	159.36	21	21	98.49	8	125	1
25-P05	11.14	18	18	4.75	14	15.39	7	61.14	23	23	1.26	8	119.14	22	197.71	8	8	98.39	9	158	9
26-P05	11.76	31	31	5.27	1	15.71	2	60.93	24	24	1.22	1	109.93	12	210.14	4	4	96.07	18	152	4
TRADITION-05	11.71	30	30	4.10	37	11.13	35	62.69	3	3	1.41	38	117.03	18	75.67	37	37	71.94	38	306	34
27-P05	10.73	9	9	4.50	28	11.70	33	59.68	34	34	1.28	18	113.96	15	135.38	27	27	99.51	7	241	29
28-P05	11.07	16	16	4.64	20	13.34	23	60.74	26	26	1.27	15	108.84	10	160.69	18	18	97.17	12	200	19
29-P05	10.69	6	6	4.68	17	15.21	8	59.04	38	38	1.26	8	105.86	6	200.37	6	6	102.78	1	140	2
30-P05	11.25	21	21	4.42	33	11.67	34	59.49	35	35	1.29	21	123.28	25	123.15	29	29	91.87	28	311	35
31-P05	11.64	28	28	4.84	11	13.85	20	60.54	30	30	1.26	8	120.99	23	185.38	14	14	92.41	26	232	27
32-P05	10.72	8	8	4.58	21	13.91	19	59.32	36	36	1.24	3	112.57	14	114.85	32	32	98.15	10	219	22
33-P05	10.01	1	1	4.43	32	14.94	12	61.35	17	17	1.29	21	100.82	1	81.72	36	36	99.53	6	180	16
34-P05	10.94	13	13	4.90	8	15.41	5	60.07	31	31	1.28	18	106.02	7	187.14	13	13	100.00	5	157	7
35-P05	10.50	5	5	3.76	38	12.38	29	61.34	18	18	1.38	37	110.03	13	53.83	38	38	84.93	34	273	32
36-P05	12.20	37	37	4.54	23	12.07	31	60.64	27	27	1.23	2	146.48	38	191.17	12	12	96.26	16	262	30
MIN	10.01			3.76		10.35		59.04			1.22		101		54			71.94			
MAX	12.33			5.27		16.28		64.14			1.41		146		242			102.78			38
AVG	11.22			4.65		13.64		61.21			1.28		119		159			93.44			

FILE NAME: P06-05
OCTOBER 19/05

2005 PRELIM 06 KERNEN LOCATION 1-36 6ROW MALTED SAMPLES

Number	TP	MOIST	ALPHA	DP	SP	VISC	EXT	BGlu	FRIAB	PF
TRADITION-05	11.41	3.77	11.60	79.89	4.04	1.37	62.24	125.14	75.95	59.43
1-P06	11.75	3.95	10.94	96.76	4.09	1.31	59.60	121.56	80.73	59.99
2-P06	10.94	3.80	16.99	183.11	4.87	1.31	61.57	85.28	92.09	73.69
3-P06	11.63	4.13	14.50	211.99	5.21	1.29	60.47	85.50	99.16	77.46
4-P06	11.61	4.25	16.31	226.00	5.15	1.29	59.56	112.42	90.65	72.78
5-P06	11.25	4.05	15.24	170.85	5.07	1.29	60.01	101.94	91.98	74.08
6-P06	11.48	4.23	13.60	145.83	4.82	1.27	60.21	99.05	92.22	71.44
7-P06	11.62	3.95	11.25	113.06	4.31	1.30	62.05	108.29	88.41	63.65
8-P06	12.19	3.92	13.52	193.39	5.37	1.30	62.40	124.81	86.12	71.59
9-P06	12.03	4.29	10.84	127.78	4.28	1.30	57.72	140.07	75.35	52.66
10-P06	11.73	4.06	12.52	175.73	4.99	1.27	60.44	115.10	91.62	69.41
11-P06	11.65	3.77	14.50	215.81	5.00	1.33	62.73	109.26	88.14	72.28
12-P06	11.09	3.98	13.22	99.47	4.43	1.35	60.55	113.80	82.96	67.87
13-P06	11.60	3.77	10.89	115.87	4.20	1.32	62.13	130.30	81.18	63.56
14-P06	11.26	3.72	13.41	80.09	4.53	1.31	62.56	112.18	85.70	71.13
15-P06	11.06	3.47	16.41	139.06	4.95	1.31	61.96	105.80	86.10	73.97
16-P06	11.03	3.92	15.06	151.21	4.82	1.29	60.74	104.34	90.41	69.82
17-P06	10.94	3.99	14.47	96.22	4.60	1.31	61.38	94.60	89.03	69.47
18-P06	11.19	4.00	12.49	155.03	4.60	1.29	60.33	119.36	93.51	74.00
19-P06	11.70	4.05	13.83	150.59	4.98	1.29	61.70	112.21	91.69	72.39
20-P06	12.75	3.82	14.33	190.24	5.06	1.32	61.52	125.45	78.29	62.83
21-P06	11.38	4.03	14.42	176.58	5.05	1.27	60.79	105.69	94.63	74.15
22-P06	12.28	4.06	15.21	177.12	5.02	1.29	60.62	113.81	86.82	71.95
23-P06	11.17	4.02	14.45	135.19	4.58	1.30	62.52	110.40	89.60	72.22
24-P06	11.29	3.95	15.28	230.43	5.03	1.30	61.36	110.01	94.29	75.15
25-P06	11.57	3.98	11.80	155.86	4.32	1.29	62.42	119.58	90.60	70.51
26-P06	11.53	3.82	13.65	117.65	4.43	1.28	60.98	117.35	85.36	66.66
27-P06	11.69	3.75	13.78	162.90	4.92	1.29	61.83	111.20	90.29	75.16
28-P06	11.58	4.29	12.91	74.92	4.64	1.31	62.70	100.33	88.21	68.23
29-P06	11.83	4.25	13.29	112.25	4.70	1.31	60.71	117.46	87.40	70.60
30-P06	11.05	4.27	15.66	113.07	4.85	1.27	59.97	81.32	100.08	81.14
31-P06	10.59	4.00	15.11	144.76	4.75	1.32	62.13	92.09	97.97	78.62
32-P06	11.12	3.92	14.11	211.77	4.90	1.25	59.86	103.22	97.10	80.33
33-P06	12.01	3.78	14.54	246.29	5.22	1.22	61.74	106.70	96.73	80.06
34-P06	12.01	3.88	11.68	129.97	4.79	1.27	60.97	117.19	84.94	73.88
35-P06	11.89	3.75	16.19	234.18	5.42	1.25	61.10	103.28	88.71	76.85
36-P06	11.42	4.09	15.51	191.70	5.21	1.26	58.10	80.56	101.26	75.97

OCTOBER 19/05
KERNEN LOCATION

2005
PRELIM 06

Priority 1
6-ROW
MALTED

Number	TP			SP		ALPHA		EXT			VISC		B-gluc		DP			FRIAB		RkSum	GlobRk
TRADITION-05	11.41	15	15	4.04	37	11.60	33	62.24	7	7	1.37	37	125.14	34	79.89	36	36	75.95	36	293	34
1-P06	11.75	29	29	4.09	36	10.94	35	59.60	34	34	1.31	25	121.56	32	96.76	33	33	80.73	34	354	36
2-P06	10.94	2	2	4.87	18	16.99	1	61.57	15	15	1.31	25	85.28	3	183.11	11	11	92.09	11	114	1
3-P06	11.63	24	24	5.21	4	14.50	13	60.47	27	27	1.29	11	85.50	4	211.99	6	6	99.16	3	149	7
4-P06	11.61	22	22	5.15	6	16.31	3	59.56	35	35	1.29	11	112.42	23	226.00	4	4	90.65	15	180	16
5-P06	11.25	11	11	5.07	7	15.24	8	60.01	31	31	1.29	11	101.94	9	170.85	15	15	91.98	12	161	10
6-P06	11.48	17	17	4.82	20	13.60	23	60.21	30	30	1.27	5	99.05	7	145.83	21	21	92.22	10	201	19
7-P06	11.62	23	23	4.31	33	11.25	34	62.05	10	10	1.30	20	108.29	16	113.06	30	30	88.41	22	251	29
8-P06	12.19	35	35	5.37	2	13.52	24	62.40	6	6	1.30	20	124.81	33	193.39	8	8	86.12	27	204	22
9-P06	12.03	34	34	4.28	34	10.84	37	57.72	37	37	1.30	20	140.07	37	127.78	26	26	75.35	37	359	37
10-P06	11.73	28	28	4.99	13	12.52	29	60.44	28	28	1.27	5	115.10	26	175.73	14	14	91.62	14	227	24
11-P06	11.65	25	25	5.00	12	14.50	13	62.73	1	1	1.33	35	109.26	17	215.81	5	5	88.14	24	163	11
12-P06	11.09	7	7	4.43	30	13.22	27	60.55	26	26	1.35	36	113.80	24	99.47	32	32	82.96	32	279	32
13-P06	11.60	21	21	4.20	35	10.89	36	62.13	8	8	1.32	32	130.30	36	115.87	28	28	81.18	33	286	33
14-P06	11.26	12	12	4.53	29	13.41	25	62.56	3	3	1.31	25	112.18	21	80.09	35	35	85.70	29	229	27
15-P06	11.06	6	6	4.95	15	16.41	2	61.96	11	11	1.31	25	105.80	14	139.06	23	23	86.10	28	164	13
16-P06	11.03	4	4	4.82	20	15.06	11	60.74	23	23	1.29	11	104.34	12	151.21	19	19	90.41	17	163	11
17-P06	10.94	2	2	4.60	26	14.47	15	61.38	17	17	1.31	25	94.60	6	96.22	34	34	89.03	20	198	18
18-P06	11.19	10	10	4.60	26	12.49	30	60.33	29	29	1.29	11	119.36	30	155.03	18	18	93.51	9	220	23
19-P06	11.70	27	27	4.98	14	13.83	20	61.70	14	14	1.29	11	112.21	22	150.59	20	20	91.69	13	202	20
20-P06	12.75	37	37	5.06	8	14.33	18	61.52	16	16	1.32	32	125.45	35	190.24	10	10	78.29	35	254	30
21-P06	11.38	14	14	5.05	9	14.42	17	60.79	22	22	1.27	5	105.69	13	176.58	13	13	94.63	7	149	7
22-P06	12.28	36	36	5.02	11	15.21	9	60.62	25	25	1.29	11	113.81	25	177.12	12	12	86.82	26	228	26
23-P06	11.17	9	9	4.58	28	14.45	16	62.52	4	4	1.30	20	110.40	19	135.19	24	24	89.60	19	176	15
24-P06	11.29	13	13	5.03	10	15.28	7	61.36	18	18	1.30	20	110.01	18	230.43	3	3	94.29	8	131	3
25-P06	11.57	19	19	4.32	32	11.80	31	62.42	5	5	1.29	11	119.58	31	155.86	17	17	90.60	16	203	21
26-P06	11.53	18	18	4.43	30	13.65	22	60.98	20	20	1.28	10	117.35	28	117.65	27	27	85.36	30	250	28
27-P06	11.69	26	26	4.92	16	13.78	21	61.83	12	12	1.29	11	111.20	20	162.90	16	16	90.29	18	194	17
28-P06	11.58	20	20	4.64	25	12.91	28	62.70	2	2	1.31	25	100.33	8	74.92	37	37	88.21	23	227	24
29-P06	11.83	30	30	4.70	24	13.29	26	60.71	24	24	1.31	25	117.46	29	112.25	31	31	87.40	25	299	35
30-P06	11.05	5	5	4.85	19	15.66	5	59.97	32	32	1.27	5	81.32	2	113.07	29	29	100.08	2	165	14
31-P06	10.59	1	1	4.75	23	15.11	10	62.13	8	8	1.32	32	92.09	5	144.76	22	22	97.97	4	136	4
32-P06	11.12	8	8	4.90	17	14.11	19	59.86	33	33	1.25	2	103.22	10	211.77	7	7	97.10	5	149	7
33-P06	12.01	32	32	5.22	3	14.54	12	61.74	13	13	1.22	1	106.70	15	246.29	1	1	96.73	6	129	2
34-P06	12.01	32	32	4.79	22	11.68	32	60.97	21	21	1.27	5	117.19	27	129.97	25	25	84.94	31	273	31
35-P06	11.89	31	31	5.42	1	16.19	4	61.10	19	19	1.25	2	103.28	11	234.18	2	2	88.71	21	143	6
36-P06	11.42	16	16	5.21	4	15.51	6	58.10	36	36	1.26	4	80.56	1	191.70	9	9	101.26	1	138	5
MIN	10.59			4.04		10.84		57.72			1.22		81		75			75.35			
MAX	12.75			5.42		16.99		62.73			1.37		140		246			101.26			37
AVG	11.52			4.79		13.88		61.07			1.29		109		155			89.33			

ILE NAME: PMYT 07
OVEMBER 24/05

005 PMYT 07 KERNEN LOCATION 6-ROW 1-36 MALTED SAMPLES

Number	Pedigree	TP	MOIST	ALPHA	DP	SP	VISC	EXT	BGlu	FRIAB	PF
RADITION-05		11.92	3.34	11.00	156.42	4.48	1.39	65.78	122.89	72.93	66.50
-PMYT07	Tradition	12.28	3.58	11.73	215.29	4.15	1.31	62.65	141.30	84.43	60.59
2-PMYT07	CDC Battleford	11.89	3.87	8.74	128.69	4.37	1.27	62.17	124.83	98.88	76.59
-PMYT07	Legacy/BT474	11.76	3.93	9.52	260.79	4.64	1.23	60.40	150.27	105.75	82.11
-PMYT07	BT477/BA6B93-2978	11.81	4.14	11.86	224.88	4.63	1.18	58.95	165.81	99.36	75.35
5-PMYT07	ZDM5236/BT478	12.08	3.93	7.33	119.52	4.12	1.21	64.52	165.90	94.55	75.00
6-PMYT07	SM01198/SM01233	11.25	3.87	10.02	173.17	4.39	1.24	62.76	128.55	112.06	84.25
-PMYT07	SM01198/SM01233	11.34	3.79	13.20	220.88	4.81	1.25	61.37	104.99	108.61	80.22
-PMYT07	SM01262/SM01147	11.89	4.15	6.47	198.88	4.08	1.23	61.81	153.40	101.98	80.77
9-PMYT07	SM01262/SM01147	11.33	4.22	5.84	130.26	4.01	1.26	59.28	145.35	109.43	77.84
0-PMYT07	6B98-9025/SM00174	11.46	3.75	8.48	259.05	4.50	1.25	62.47	159.59	106.89	82.60
1-PMYT07	6B98-9025/SM00174	11.46	3.88	8.62	178.01	4.60	1.23	60.84	142.92	103.75	79.65
12-PMYT07	6B98-9025/SM00174	11.81	3.63	12.13	252.21	4.96	1.23	60.38	134.92	106.55	79.48
3-PMYT07	6B98-9025/SM00174	12.41	3.98	6.70	145.23	4.01	1.25	60.24	165.26	92.92	66.84
4-PMYT07	6B98-9025/SM00174	12.26	4.10	10.24	219.01	4.96	1.22	59.78	125.27	103.21	76.70
15-PMYT07	6B98-9025/SM00174	11.74	3.89	9.01	270.68	4.85	1.28	61.37	145.20	103.93	80.65
16-PMYT07	6B98-9555/BT479	12.45	3.98	5.97	192.85	4.05	1.22	58.93	182.77	91.98	70.06
7-PMYT07	6B98-9555/BT479	11.57	3.91	7.24	155.42	4.12	1.28	62.41	152.70	97.80	73.59
18-PMYT07	6B98-9555/BT479	11.41	3.69	10.88	226.95	4.39	1.30	61.92	139.83	101.60	77.86
19-PMYT07	6B98-9555/BT479	11.31	3.91	8.14	201.16	4.17	1.27	62.42	152.99	103.87	80.84
0-PMYT07	6B98-9555/BT479	11.80	3.71	8.75	205.29	4.31	1.28	61.63	161.88	97.64	78.94
1-PMYT07	6B98-9555/BT479	11.46	3.71	11.19	254.65	4.59	1.26	62.73	151.53	102.76	80.00
22-PMYT07	6B98-9555/BT479	12.06	3.54	8.26	265.38	4.89	1.23	62.40	134.32	106.22	82.52
3-PMYT07	6B92-7166/SM00207	12.32	3.58	5.73	143.83	3.72	1.26	62.53	174.07	87.58	71.20
4-PMYT07	6B92-7166/SM00207	11.68	3.93	8.77	181.97	4.43	1.26	62.44	138.56	102.77	78.52
25-PMYT07	6B92-7166/SM00207	12.65	3.75	7.84	192.79	4.28	1.23	62.39	163.30	92.74	71.64
6-PMYT07	6B97-2601/BT478	12.50	3.86	13.40	233.04	4.84	1.18	60.56	132.89	97.59	73.40
7-PMYT07	6B97-2601/BT478	12.54	3.95	10.87	217.41	4.93	1.23	62.39	135.72	100.32	80.78
28-PMYT07	6B97-2601/BT478	11.68	4.22	9.33	193.92	4.34	1.26	59.41	155.97	99.37	80.74
29-PMYT07	6B97-2601/BT478	12.07	4.06	10.19	189.84	4.70	1.24	61.83	137.02	101.38	81.33
0-PMYT07	6B97-2601/BT478	11.82	4.05	10.88	235.01	4.76	1.22	62.66	132.07	100.64	77.31
31-PMYT07	6B97-2601/BT478	12.07	3.94	11.97	212.05	4.79	1.22	61.93	157.48	100.97	82.98
32-PMYT07	6B98-9030/BT477	12.45	3.85	10.22	230.25	4.84	1.22	61.84	150.54	103.01	79.95
3-PMYT07	6B98-9030/BT477	11.82	3.97	9.72	183.57	4.39	1.24	61.91	151.11	98.42	74.91
4-PMYT07	6B98-9030/BT477	11.90	3.83	9.39	199.56	4.62	1.26	61.66	144.55	103.08	82.25
35-PMYT07	6B98-9030/BT477	11.27	3.70	9.78	245.23	4.30	1.28	61.44	149.11	101.03	81.91
6-PMYT07	6B98-9030/BT477	11.80	4.02	10.05	190.94	4.68	1.21	59.79	139.11	100.24	78.29

NOVEMBER 24/05
KERNEN LOCATION

2005
PMYT 07

Priority 3
6-ROW
1-36

Number	TPI			SP		ALPHA		EXT			VISC		B-gluc		PPO			FRIAB		RkSum	GlobRk
TRADITIO	11.92	24	24	4.48	19	11.00	7	65.78	1	1	1.39	37	122.89	2	156.42	30	30	72.93	37	212	23
1-PMYT0	13.48	37	37	4.48	19	8.48	26	61.21	26	26	1.23	10	163.83	32	72.67	37	37	86.10	36	323	35
2-PMYT0	11.89	21	21	4.37	25	8.74	24	62.17	14	14	1.27	30	124.83	3	128.69	35	35	98.88	26	248	27
3-PMYT0	11.76	14	14	4.64	13	9.52	18	60.40	29	29	1.23	10	150.27	20	260.79	3	3	105.75	7	160	9
4-PMYT0	11.81	17	17	4.63	14	11.86	5	58.95	36	36	1.18	1	165.81	34	224.88	12	12	99.36	25	209	21
5-PMYT0	12.08	28	28	4.12	31	7.33	31	64.52	2	2	1.21	3	165.90	35	119.52	36	36	94.55	31	263	32
6-PMYT0	11.25	1	1	4.39	22	10.02	15	62.76	3	3	1.24	18	128.55	5	173.17	29	29	112.06	1	127	4
7-PMYT0	11.34	5	5	4.81	8	13.20	2	61.37	24	24	1.25	21	104.99	1	220.88	13	13	108.61	3	119	3
8-PMYT0	11.89	21	21	4.08	33	6.47	34	61.81	20	20	1.23	10	153.40	26	198.88	20	20	101.98	16	241	26
9-PMYT0	11.33	4	4	4.01	35	5.84	36	59.28	35	35	1.26	24	145.35	18	130.26	34	34	109.43	2	261	31
10-PMYT	11.46	7	7	4.50	18	8.48	26	62.47	7	7	1.25	21	159.59	29	259.05	4	4	106.89	4	134	6
11-PMYT	11.46	7	7	4.60	16	8.62	25	60.84	27	27	1.23	10	142.92	15	178.01	28	28	103.75	10	200	19
12-PMYT	11.81	17	17	4.96	1	12.13	3	60.38	30	30	1.23	10	134.92	9	252.21	6	6	106.55	5	134	6
13-PMYT	12.41	31	31	4.01	35	6.70	33	60.24	31	31	1.25	21	165.26	33	145.23	32	32	92.92	32	342	37
14-PMYT	12.26	29	29	4.96	1	10.24	11	59.78	33	33	1.22	5	125.27	4	219.01	14	14	103.21	11	184	16
15-PMYT	11.74	13	13	4.85	5	9.01	21	61.37	24	24	1.28	32	145.20	17	270.68	1	1	103.93	8	159	8
16-PMYT	12.45	32	32	4.05	34	5.97	35	58.93	37	37	1.22	5	182.77	37	192.85	22	22	91.98	34	327	36
17-PMYT	11.57	10	10	4.12	31	7.24	32	62.41	10	10	1.28	32	152.70	24	155.42	31	31	97.80	28	249	28
18-PMYT	11.41	6	6	4.39	22	10.88	8	61.92	16	16	1.30	36	139.83	14	226.95	11	11	101.60	17	163	10
19-PMYT	11.31	3	3	4.17	30	8.14	29	62.42	9	9	1.27	30	152.99	25	201.16	18	18	103.87	9	183	15
20-PMYT	11.80	15	15	4.31	27	8.75	23	61.63	22	22	1.28	32	161.88	30	205.29	17	17	97.64	29	249	28
21-PMYT	11.46	7	7	4.59	17	11.19	6	62.73	4	4	1.26	24	151.53	23	254.65	5	5	102.76	15	117	2
22-PMYT	12.06	25	25	4.89	4	8.26	28	62.40	11	11	1.23	10	134.32	8	265.38	2	2	106.22	6	132	5
23-PMYT	12.32	30	30	3.72	37	5.73	37	62.53	6	6	1.26	24	174.07	36	143.83	33	33	87.58	35	307	34
24-PMYT	11.68	11	11	4.43	21	8.77	22	62.44	8	8	1.26	24	138.56	12	181.97	27	27	102.77	14	185	17
25-PMYT	12.65	36	36	4.28	29	7.84	30	62.39	12	12	1.23	10	163.30	31	192.79	23	23	92.74	33	275	33
26-PMYT	12.50	34	34	4.84	6	13.40	1	60.56	28	28	1.18	1	132.89	7	233.04	9	9	97.59	30	187	18
27-PMYT	12.54	35	35	4.93	3	10.87	10	62.39	12	12	1.23	10	135.72	10	217.41	15	15	100.32	22	179	13
28-PMYT	11.68	11	11	4.34	26	9.33	20	59.41	34	34	1.26	24	155.97	27	193.92	21	21	99.37	24	253	30
29-PMYT	12.07	26	26	4.70	11	10.19	13	61.83	19	19	1.24	18	137.02	11	189.84	25	25	101.38	18	211	22
30-PMYT	11.82	19	19	4.76	10	10.88	8	62.66	5	5	1.22	5	132.07	6	235.01	8	8	100.64	21	114	1
31-PMYT	12.07	26	26	4.79	9	11.97	4	61.93	15	15	1.22	5	157.48	28	212.05	16	16	100.97	20	180	14
32-PMYT	12.45	32	32	4.84	6	10.22	12	61.84	18	18	1.22	5	150.54	21	230.25	10	10	103.01	13	177	11
33-PMYT	11.82	19	19	4.39	22	9.72	17	61.91	17	17	1.24	18	151.11	22	183.57	26	26	98.42	27	230	25
34-PMYT	11.90	23	23	4.62	15	9.39	19	61.66	21	21	1.26	24	144.55	16	199.56	19	19	103.08	12	212	23
35-PMYT	11.27	2	2	4.30	28	9.78	16	61.44	23	23	1.28	32	149.11	19	245.23	7	7	101.03	19	178	12
36-PMYT	11.80	15	15	4.68	12	10.05	14	59.79	32	32	1.21	3	139.11	13	190.94	24	24	100.24	23	207	20
MIN	11.25			3.72		5.73		58.93			1.18		105		73			72.93			
MAX	13.48			4.96		13.40		65.78			1.39		183		271			112.06			37
AVG	11.91			4.49		9.36		61.58			1.25		147		199			99.94			

2005 SMYT NIR-Wet Chem Correlations.xls
SMYT#1 - Goodale Correlation

	NIR TP	NIR Moist	NIR Alpha	NIR DP	NIR SP	NIR Visc	NIR Extract	NIR Bglu	NIR Friab	NIR PF	NIT Protein	Wet Chem Alpha Con	Wet Chem DP	Wet Chem Bglu	Wet Chem FAN	Wet Chem Extract	Wet Chem Friab
NIR TP	1.00																
NIR Moist	0.06	1.00															
NIR Alpha	-0.45	-0.11	1.00														
NIR DP	0.55	-0.01	-0.22	1.00													
NIR SP	0.35	0.06	0.18	0.47	1.00												
NIR Visc	-0.23	-0.16	0.08	-0.36	-0.19	1.00											
NIR Extract	-0.32	-0.44	0.21	-0.29	-0.07	0.56	1.00										
NIR Bglu	0.62	-0.07	-0.44	0.45	0.21	-0.27	-0.33	1.00									
NIR Friab	-0.55	0.23	0.19	0.15	0.11	-0.37	-0.26	-0.31	1.00								
NIR PF	-0.45	0.01	0.27	0.14	0.39	-0.06	0.19	-0.13	0.69	1.00							
NIT Protein	**0.87**	0.19	-0.35	0.51	0.36	-0.33	-0.44	0.73	-0.48	-0.36	1.00						
Wet Chem Alpha Con	-0.06	0.17	**0.43**	0.02	0.39	-0.43	-0.30	-0.21	0.25	0.16	0.04	1.00					
Wet Chem DP	0.25	0.24	0.04	**0.22**	0.12	-0.18	-0.24	-0.11	-0.04	-0.09	0.25	0.36	1.00				
Wet Chem Bglu	0.14	0.17	-0.06	0.12	-0.16	0.07	0.18	**0.27**	-0.21	-0.08	0.30	-0.33	0.05	1.00			
Wet Chem FAN	0.38	0.42	-0.05	0.19	**0.05**	0.01	-0.33	0.05	-0.22	-0.23	0.45	0.12	0.30	0.25	1.00		
Wet Chem Extract	-0.40	-0.28	0.41	-0.48	0.08	0.53	**0.66**	-0.47	-0.14	0.14	-0.50	-0.05	-0.23	-0.25	-0.34	1.00	
Wet Chem Friab	-0.56	-0.03	0.38	-0.42	0.02	-0.02	0.01	-0.58	**0.37**	**0.29**	-0.58	0.54	0.07	-0.73	-0.18	0.40	1.00

2005 SMYT NIR-Wet Chem Correlations.xls
SMYT#1 - Kernen Correlation

	NIR TP	NIR Moist	NIR Alpha	NIR DP	NIR SP	NIR Visc	NIR Extract	NIR Bglu	NIR Friab	NIR PF	NIT Protein	Wet Chem Alpha Con	Wet Chem DP	Wet Chem Bglu	Wet Chem FAN	Wet Chem Extract	Wet Chem Friab
NIR TP	1.00																
NIR Moist	0.34	1.00															
NIR Alpha	-0.32	-0.19	1.00														
NIR DP	0.38	0.28	0.18	1.00													
NIR SP	0.46	-0.06	0.21	0.58	1.00												
NIR Visc	-0.17	-0.24	0.08	-0.23	-0.16	1.00											
NIR Extract	-0.27	-0.29	0.22	-0.33	-0.18	0.47	1.00										
NIR Bglu	0.51	0.06	-0.48	0.31	0.38	-0.22	-0.56	1.00									
NIR Friab	-0.47	0.20	0.12	0.37	-0.02	-0.39	-0.33	-0.12	1.00								
NIR PF	-0.40	-0.09	0.19	0.30	0.25	-0.18	0.04	0.06	0.64	1.00							
NIT Protein	**0.82**	0.25	-0.28	0.47	0.47	-0.12	-0.35	0.66	-0.39	-0.14	1.00						
Wet Chem Alpha Con	0.23	0.22	**0.60**	0.58	0.47	-0.28	-0.14	-0.06	0.24	0.27	0.24	1.00					
Wet Chem DP	0.06	-0.03	0.28	**0.18**	0.12	-0.09	0.16	-0.41	0.08	-0.05	-0.12	0.31	1.00				
Wet Chem Bglu	0.09	-0.36	-0.27	-0.29	-0.13	0.25	-0.06	**0.26**	-0.44	-0.31	0.18	-0.48	-0.10	1.00			
Wet Chem FAN	0.16	-0.03	0.22	0.24	**0.08**	-0.04	0.15	-0.25	0.04	-0.06	-0.11	0.27	0.78	-0.27	1.00		
Wet Chem Extract	-0.17	0.03	0.12	-0.13	-0.03	0.13	**0.30**	-0.04	-0.06	0.12	-0.14	-0.18	-0.42	0.07	-0.35	1.00	
Wet Chem Friab	-0.42	0.20	0.45	0.24	0.05	-0.10	0.13	-0.39	**0.59**	**0.48**	-0.38	0.37	0.09	-0.81	0.16	0.09	1.00

2005 SMYT NIR-Wet Chem Correlations.xls

SMYT#2 - Kernen Correlations

	NIR TP	NIR Moist	NIR Alpha	NIR DP	NIR SP	NIR Visc	NIR Extract	NIR Bglu	NIR Friab	NIR PF	NIT Protein	Wet Chem Alpha Con	Wet Chem DP	Wet Chem Bglu	Wet Chem FAN	Wet Chem Extract	Wet Chem Friab
NIR TP	1.00																
NIR Moist	0.27	1.00															
NIR Alpha	-0.36	-0.33	1.00														
NIR DP	0.52	0.08	0.19	1.00													
NIR SP	0.37	-0.03	0.48	0.75	1.00												
NIR Visc	-0.56	-0.42	0.23	-0.53	-0.50	1.00											
NIR Extract	-0.48	-0.57	0.21	-0.31	-0.26	0.74	1.00										
NIR Bglu	0.60	0.36	-0.56	0.33	0.00	-0.48	-0.55	1.00									
NIR Friab	-0.17	0.33	0.00	0.26	0.36	-0.58	-0.41	-0.03	1.00								
NIR PF	-0.29	-0.18	0.04	0.01	0.30	-0.21	-0.04	-0.07	0.59	1.00							
NIT Protein	**0.73**	0.34	-0.02	0.73	0.56	-0.66	-0.54	0.51	0.01	-0.26	1.00						
Wet Chem Alpha Con	-0.12	-0.42	**0.46**	0.34	0.55	-0.26	-0.09	-0.19	0.39	0.44	0.03	1.00					
Wet Chem DP	0.40	-0.06	0.25	**0.51**	0.58	-0.45	-0.29	-0.06	0.20	0.13	0.43	0.37	1.00				
Wet Chem Bglu	-0.10	-0.04	-0.05	-0.30	-0.38	0.66	0.50	**-0.14**	-0.61	-0.39	-0.22	-0.49	-0.31	1.00			
Wet Chem FAN	0.10	0.37	0.09	0.07	**0.00**	0.04	-0.10	-0.06	-0.16	-0.31	0.19	-0.23	-0.04	0.02	1.00		
Wet Chem Extract	-0.09	-0.42	0.44	0.20	0.46	0.00	**0.07**	-0.33	0.18	0.47	-0.13	0.57	0.36	-0.19	-0.14	1.00	
Wet Chem Friab	-0.32	-0.14	0.40	0.16	0.47	-0.31	-0.05	-0.33	**0.60**	**0.55**	-0.04	0.65	0.28	-0.64	-0.01	0.35	1.00

2005 SMYT NIR-Wet Chem Correlations.xls
SMYT#3 - Wakaw Correlations

	NIR TP	NIR Moist	NIR Alpha	NIR DP	NIR SP	NIR Visc	NIR Ext	NIR Bglu	NIR Friab	NIR PF	NIT Prot (%)	Wet Chem Alpha C	Wet Chem DP	Wet Chem BG	Wet Chem FAN	Wet Chem Extract	Wet Chem Friab
NIR TP	1.00																
NIR Moist	0.33	1.00															
NIR Alpha	0.11	0.05	1.00														
NIR DP	0.54	0.41	0.28	1.00													
NIR SP	0.17	0.02	0.74	0.21	1.00												
NIR Visc	-0.60	-0.39	-0.32	-0.56	-0.36	1.00											
NIR Ext	0.17	-0.08	0.29	0.36	-0.14	-0.24	1.00										
NIR Bglu	0.31	0.22	-0.37	0.21	-0.47	-0.10	0.12	1.00									
NIR Friab	-0.28	0.28	0.27	0.39	0.25	-0.38	0.09	-0.37	1.00								
NIR PF	0.24	0.22	0.35	0.60	0.01	-0.54	0.84	0.10	0.47	1.00							
NIT Prot (%)	**0.75**	0.15	0.14	0.32	0.09	-0.36	0.03	0.34	-0.34	0.04	1.00						
Wet Chem Alpha C	-0.15	0.02	**0.67**	0.23	0.72	-0.31	0.03	-0.43	0.55	0.21	-0.21	1.00					
Wet Chem DP	-0.11	-0.04	0.46	**0.00**	0.06	0.04	0.50	-0.08	0.14	0.38	-0.05	0.12	1.00				
Wet Chem BG	0.04	-0.04	-0.26	-0.22	-0.54	0.45	0.21	**0.29**	-0.49	-0.06	0.22	-0.69	0.17	1.00			
Wet Chem FAN	0.22	0.28	-0.01	0.29	**0.23**	-0.35	-0.40	0.09	0.16	-0.16	0.35	0.25	-0.63	-0.29	1.00		
Wet Chem Extract	-0.27	-0.05	0.21	-0.09	0.36	0.08	**-0.23**	-0.16	0.22	-0.16	-0.31	0.61	-0.09	-0.40	0.23	1.00	
Wet Chem Friab	-0.24	-0.08	0.40	0.07	0.59	-0.36	-0.04	-0.45	**0.62**	**0.17**	-0.40	0.76	0.08	-0.78	0.13	0.54	1.00

2005 SMYT NIR-Wet Chem Correlations.xls
SMYT#3 - Kernen Correlations

	NIR TP	NIR Moist	NIR Alpha	NIR DP	NIR SP	NIR Visc	NIR Ext	NIR Bglu	NIR Friab	NIR PF	NIT Prot (%)	Wet Chem Alpha C	Wet Chem DP	Wet Chem BG	Wet Chem FAN	Wet Chem Extract	Wet Chem Friab
NIR TP	1.00																
NIR Moist	0.10	1.00															
NIR Alpha	0.05	-0.19	1.00														
NIR DP	0.23	0.01	0.29	1.00													
NIR SP	0.38	-0.08	0.81	0.56	1.00												
NIR Visc	-0.22	-0.30	0.00	-0.25	-0.31	1.00											
NIR Ext	-0.21	-0.35	0.30	-0.14	-0.01	0.60	1.00										
NIR Bglu	0.40	0.02	-0.35	-0.31	-0.33	-0.02	-0.27	1.00									
NIR Friab	-0.59	0.32	-0.08	0.35	0.00	-0.31	-0.23	-0.54	1.00								
NIR PF	-0.58	-0.08	0.28	0.24	0.28	-0.15	0.15	-0.50	0.72	1.00							
NIT Prot (%)	**0.70**	0.24	0.06	0.21	0.26	-0.15	-0.21	0.35	-0.35	-0.46	1.00						
Wet Chem Alpha C	-0.30	-0.11	**0.70**	0.06	0.51	0.04	0.36	-0.31	0.17	0.53	-0.24	1.00					
Wet Chem DP	0.21	-0.23	0.03	**0.35**	0.13	-0.13	0.01	0.09	-0.07	-0.04	0.19	0.14	1.00				
Wet Chem BG	0.25	-0.06	-0.41	-0.28	-0.45	0.22	-0.14	**0.53**	-0.31	-0.50	0.13	-0.55	-0.12	1.00			
Wet Chem FAN	0.15	0.16	-0.35	0.28	**-0.07**	-0.56	-0.50	0.06	0.30	-0.04	0.17	-0.38	0.30	0.02	1.00		
Wet Chem Extract	-0.17	-0.31	0.07	0.08	0.06	-0.11	**0.08**	-0.23	0.10	0.23	-0.18	0.12	0.27	-0.13	0.17	1.00	
Wet Chem Friab	-0.27	0.04	0.16	0.26	0.15	-0.02	-0.03	-0.23	**0.40**	**0.50**	-0.07	0.38	-0.01	-0.36	-0.10	-0.09	1.00

PRELIM 4 KERNEN LOCATION

NOV 18/05 6-ROW

ROW	PROTEIN	ALPHA CONV	DP	BETA GLUCAN	FAN	70°C EXTRACT	FRIAB
TRADITION-05	12.28	39.69	159.95	206.88	26.61	60.26	47.80
P04-1	12.83	47.29	198.44	241.40	27.38	57.73	39.70
P04-2	11.69	77.86	217.00	111.35	31.95	64.36	79.60
P04-3	10.57	72.04	197.21	107.84	31.78	64.6	71.20
P04-4	11.88	51.04	193.94	197.64	31.71	60.91	55.90
P04-5	11.77	45.63	185.31	323.33	29.99	60.23	52.40
P04-6	11.65	54.69	196.18	294.54	31.41	62.07	58.60
P04-7	11.41	43.83	198.09	207.42	30.86	61.85	62.20
P04-8	11.18	63.25	213.88	169.36	35.07	61.83	68.70
P04-9	10.70	78.91	190.98	66.24	35.21	63.64	83.60
P04-10	10.28	60.28	187.40	237.93	36.85	62.73	69.60
P04-11	10.98	79.67	217.31	121.45	40.14	64.79	80.50
P04-12	10.90	58.20	193.92	304.57	37.43	59.75	62.60
P04-13	11.96	65.27	197.06	312.86	42.68	59.03	66.70
P04-14	13.16	65.42	217.14	182.74	43.63	59.04	65.50
P04-15	12.32	62.20	192.78	293.62	44.38	56.30	61.70
P04-16	11.85	58.38	195.16	214.34	41.62	57.68	49.50
P04-17	11.64	97.89	258.75	204.76	49.18	61.32	83.00
P04-18	13.34	101.76	271.16	226.69	53.14	60.86	77.00
P04-19	11.97	71.25	212.68	45.42	26.20	61.32	86.70
P04-20	11.40	61.16	217.63	125.85	23.94	60.86	77.30
P04-21	11.12	70.90	228.42	81.48	26.10	61.78	86.20
P04-22	11.49	65.49	232.59	156.20	26.05	62.24	75.50
P04-23	11.11	64.50	221.83	93.65	29.20	61.55	80.30
P04-24	11.71	70.69	195.31	204.14	28.49	57.21	71.30
P04-25	11.82	68.96	196.67	148.22	28.91	62.00	79.20
P04-26	11.75	83.57	221.51	90.87	31.28	62.70	85.90
P04-27	11.06	68.56	202.68	178.94	29.68	59.72	72.80
P04-28	11.75	74.37	209.68	168.22	29.94	62.70	78.40
P04-29	11.73	84.25	243.69	365.96	31.79	60.85	66.50
P04-30	12.58	93.67	230.28	144.76	36.47	61.06	75.40
P04-31	12.57	91.61	235.50	142.05	38.31	62.45	83.20
P04-32	11.41	90.38	212.00	176.32	35.48	61.98	85.80
P04-33	11.46	74.02	202.53	262.40	39.00	62.68	67.90
P04-34	12.74	92.38	250.17	301.40	40.84	62.21	79.20
P04-35	12.24	93.32	262.14	255.13	43.30	59.69	77.30
P04-36	11.33	114.79	261.98	125.08	46.42	61.54	86.10

[redacted]E: NO[redacted]BER [redacted]05 [redacted]ROW
KERNEN LOCATION
PRELIM 4
1-36

Entries	NIT PROTEIN		FAN %		α-Amyl. D.U.		DP °L		70°C Ext. %		β-glucan p.p.m.		Friab. %		GlobRk
TRADITION-05	12.28	30	26.61		39.69	37	159.95	37	60.26	27	206.88	23	47.8	36	32
P04-1	12.83	35	27.38	1	47.29	34	198.44	23	57.73	34	241.40	28	39.7	37	33
P04-2	11.69	18	31.95	18	77.86	13	217.00	16	64.36	3	111.35	7	79.6	11	7
P04-3	10.57	2	31.78	16	72.04	16	197.21	25	64.6	2	107.84	6	71.2	22	9
P04-4	11.88	26	31.71	15	51.04	33	193.94	31	60.91	23	197.64	20	55.9	33	29
P04-5	11.77	23	29.99	10	45.63	35	185.31	36	60.23	28	323.33	36	52.4	34	35
P04-6	11.65	17	31.41	14	54.69	32	196.18	28	62.07	12	294.54	32	58.6	32	28
P04-7	11.41	12	30.86	12	43.83	36	198.09	24	61.85	15	207.42	24	62.2	30	27
P04-8	11.18	9	35.07	19	63.25	26	213.88	17	61.83	16	169.36	16	68.7	24	19
P04-9	10.70	3	35.21	20	78.91	12	190.98	34	63.64	4	66.24	2	83.6	6	5
P04-10	10.28	1	36.85	23	60.28	29	187.40	35	62.73	5	237.93	27	69.6	23	24
P04-11	10.98	5	40.14	27	79.67	11	217.31	14	64.79	1	121.45	8	80.5	9	3
P04-12	10.90	4	37.43	24	58.20	31	193.92	32	59.75	29	304.57	34	62.6	29	30
P04-13	11.96	27	42.68	30	65.27	24	197.06	26	59.03	33	312.86	35	66.7	26	34
P04-14	13.16	36	43.63	32	65.42	23	217.14	15	59.04	32	182.74	19	65.5	28	31
P04-15	12.32	31	44.38	33	62.20	27	192.78	33	56.30	37	293.62	31	61.7	31	37
P04-16	11.85	25	41.62	29	58.38	30	195.16	30	57.68	35	214.34	25	49.5	35	36
P04-17	11.64	16	49.18	35	97.89	3	258.75	4	61.32	20	204.76	22	83.0	8	14
P04-18	13.34	37	53.14	36	101.76	2	271.16	1	60.86	24	226.69	26	77.0	17	24
P04-19	11.97	28	26.20	3	71.25	17	212.68	18	61.32	20	45.42	1	86.7	1	8
P04-20	11.40	11	23.94	11	61.16	28	217.63	13	60.86	24	125.85	10	77.3	15	15
P04-21	11.12	8	26.10	4	70.90	18	228.42	10	61.78	17	81.48	3	86.2	2	1
P04-22	11.49	15	26.05	5	65.49	22	232.59	8	62.24	10	156.20	14	75.5	18	10
P04-23	11.11	7	29.20	7	64.50	25	221.83	11	61.55	18	93.65	5	80.3	10	6
P04-24	11.71	19	28.49	2	70.69	19	195.31	29	57.21	36	204.14	21	71.3	21	26
P04-25	11.82	24	28.91	6	68.96	20	196.67	27	62.00	13	148.22	13	79.2	12	16
P04-26	11.75	21	31.28	13	83.57	10	221.51	12	62.70	6	90.87	4	85.9	4	2
P04-27	11.06	6	29.68	8	68.56	21	202.68	21	59.72	30	178.94	18	72.8	20	18
P04-28	11.75	21	29.94	9	74.37	14	209.68	20	62.70	6	168.22	15	78.4	14	13
P04-29	11.73	20	31.79	17	84.25	9	243.69	6	60.85	26	365.96	37	66.5	27	22
P04-30	12.58	33	36.47	22	93.67	4	230.28	9	61.06	22	144.76	12	75.4	19	17
P04-31	12.57	32	38.31	25	91.61	7	235.50	7	62.45	9	142.05	11	83.2	7	12
P04-32	11.41	12	35.48	21	90.38	8	212.00	19	61.98	14	176.32	17	85.8	5	11
P04-33	11.46	14	39.00	26	74.02	15	202.53	22	62.68	8	262.40	30	67.9	25	21
P04-34	12.74	34	40.84	28	92.38	6	250.17	5	62.21	11	301.40	33	79.2	12	20
P04-35	12.24	29	43.30	31	93.32	5	262.14	2	59.69	31	255.13	29	77.3	15	22
P04-36	11.33	10	46.42	34	114.79	1	261.98	3	61.54	19	125.08	9	86.1	3	4
Min. value	10.28		23.94		39.69		159.95		56.30		45		39.70		
Max. value	13.34		53.14		114.79		271.16		64.79		366		86.70		
Average	11.72		34.93		71.82		214.03		61.18		192		71.64		

PRELIM 5 KERNEN 6-ROW

NOVEMBER 24,2005

		PROTEIN	ALPHA CONV	DP	BETA GLUCAN	FAN	EXTRACT 70oC	FRIAB
TRADITION-05		11.54	48.99	167.35	157.74	29.72	56.37	55.40
P05-1	Tradition	12.48	50.00	198.03	187.35	30.38	54.55	51.90
P05-2	CDC Battleford	10.96	78.68	184.41	72.68	33.10	63.67	83.90
P05-3	BT483/6B95-2089	11.47	71.27	192.90	94.04	34.17	62.56	79.40
P05-4	BT483/6B95-2089	11.16	57.29	172.14	195.71	35.94	59.79	68.40
P05-5	BT483/6B95-2089	12.04	69.95	212.02	115.35	35.02	60.91	76.60
P05-6	BT483/6B95-2089	11.10	77.06	209.78	104.07	34.97	63.42	81.70
P05-7	BT483/6B95-2089	11.92	70.99	185.90	114.33	33.93	62.24	83.10
P05-8	BT483/6B95-2089	12.58	65.03	197.22	174.85	33.80	58.05	66.70
P05-9	BT482/ND15477	12.03	68.51	199.16	171.25	35.08	61.79	73.70
P05-10	BT482/ND15477	11.94	96.12	217.63	85.88	36.57	62.93	85.00
P05-11	BT482/ND15477	11.85	81.81	239.43	228.66	36.58	61.33	78.40
P05-12	BT482/ND15477	11.82	95.95	232.97	138.16	39.28	63.61	78.70
P05-13	BT482/ND15477	11.70	88.72	223.21	290.07	42.11	62.02	77.50
P05-14	BT482/ND15477	11.57	94.95	254.66	267.07	40.49	60.46	75.80
P05-15	BT482/ND15477	11.87	80.54	252.43	261.85	40.11	60.64	64.10
P05-16	SM00207/SM00150	10.53	87.23	236.01	272.64	42.75	60.86	71.90
P05-17	SM00207/SM00150	11.28	92.59	234.52	250.78	45.04	61.58	77.30
P05-18	SM00207/SM00150	11.31	104.65	256.83	144.74	54.90	63.84	80.00
P05-19	SM00207/SM00150	11.38	66.26	186.58	65.93	37.19	61.57	88.40
P05-20	SM00207/SM00150	10.55	65.25	170.83	113.90	38.08	62.25	85.50
P05-21	SM00156/SM00174	11.11	67.01	173.96	108.83	38.49	61.56	80.10
P05-22	SM00156/SM00174	12.47	80.17	210.54	34.40	40.42	62.69	88.70
P05-23	SM00156/SM00174	11.70	77.06	178.76	108.47	38.91	61.33	81.80
P05-24	SM00156/SM00174	10.24	87.77	177.51	55.67	40.85	63.62	89.60
P05-25	SM00156/SM00174	10.85	74.36	171.86	98.75	40.07	62.71	80.90
P05-26	SM00156/SM00174	11.06	91.93	201.12	65.06	41.95	62.25	89.20
P05-27	Legacy/BT474	11.22	84.85	217.52	199.24	41.29	63.89	76.90
P05-28	Legacy/BT474	11.47	80.55	194.22	180.93	42.22	61.39	80.10
P05-29	Legacy/BT474	11.22	94.88	213.81	96.15	42.64	63.14	87.30
P05-30	Legacy/BT474	11.53	81.33	214.41	212.24	42.94	62.27	73.40
P05-31	Legacy/BT474	12.40	88.32	261.32	177.88	45.79	61.82	78.60
P05-32	BT477/BA6B93-2978	10.89	95.48	216.33	142.27	46.88	62.71	82.00
P05-33	BT477/BA6B93-2978	10.40	84.33	208.49	243.20	45.04	64.34	82.10
P05-34	BT477/BA6B93-2978	11.45	115.20	261.72	94.54	51.31	63.39	85.60
P05-35	ZDM5236/BT478	11.10	74.74	216.82	183.76	44.79	58.03	55.10
P05-36	ZDM5236/BT478	12.62	69.93	202.36	167.10	49.41	57.93	62.30

KERNEN LOCATION

PRELIM 6

Entries	NIT PROTEIN		FAN %		α-Amyl. D.U.		DP °L		70°C Ext. %		β-glucan p.p.m.		Friab. %		GlobRk
TRADITION-05	11.54	22	29.72		48.99	37	167.35	37	56.37	36	157.74	20	55.4	35	35
P05-1	12.48	35	30.38	1	50.00	36	198.03	24	54.55	37	187.35	27	51.9	37	36
P05-2	10.96	7	33.10	2	78.68	21	184.41	30	63.67	4	72.68	5	83.9	9	3
P05-3	11.47	19	34.17	5	71.27	26	192.90	27	62.56	14	94.04	7	79.4	19	13
P05-4	11.16	12	35.94	9	57.29	35	172.14	34	59.79	32	195.71	28	68.4	31	33
P05-5	12.04	32	35.02	7	69.95	28	212.02	17	60.91	28	115.35	16	76.6	26	27
P05-6	11.10	9	34.97	6	77.06	22	209.78	19	63.42	7	104.07	11	81.7	14	7
P05-7	11.92	29	33.93	4	70.99	27	185.90	29	62.24	18	114.33	15	83.1	10	18
P05-8	12.58	36	33.80	3	65.03	34	197.22	25	58.05	33	174.85	23	66.7	32	34
P05-9	12.03	31	35.08	8	68.51	30	199.16	23	61.79	21	171.25	22	73.7	28	30
P05-10	11.94	30	36.57	10	96.12	3	217.63	11	62.93	10	85.88	6	85.0	8	3
P05-11	11.85	27	36.58	11	81.81	16	239.43	6	61.33	26	228.66	31	78.4	22	19
P05-12	11.82	26	39.28	16	95.95	4	232.97	9	63.61	6	138.16	17	78.7	20	9
P05-13	11.70	24	42.11	24	88.72	10	223.21	10	62.02	19	290.07	37	77.5	23	26
P05-14	11.57	23	40.49	20	94.95	6	254.66	4	60.46	31	267.07	35	75.8	27	25
P05-15	11.87	28	40.11	18	80.54	19	252.43	5	60.64	30	261.85	34	64.1	33	31
P05-16	10.53	3	42.75	27	87.23	13	236.01	7	60.86	29	272.64	36	71.9	30	24
P05-17	11.28	15	45.04	30	92.59	8	234.52	8	61.58	22	250.78	33	77.3	24	20
P05-18	11.31	16	54.90	36	104.65	2	256.83	3	63.84	3	144.74	19	80.0	18	8
P05-19	11.38	17	37.19	12	66.26	32	186.58	28	61.57	23	65.93	4	88.4	4	16
P05-20	10.55	4	38.08	13	65.25	33	170.83	36	62.25	16	113.90	14	85.5	7	17
P05-21	11.11	11	38.49	14	67.01	31	173.96	33	61.56	24	108.83	13	80.1	16	21
P05-22	12.47	34	40.42	19	80.17	20	210.54	18	62.69	13	34.40	1	88.7	3	11
P05-23	11.70	24	38.91	15	77.06	22	178.76	31	61.33	26	108.47	12	81.8	13	22
P05-24	10.24	1	40.85	21	87.77	12	177.51	32	63.62	5	55.67	2	89.6	1	1
P05-25	10.85	5	40.07	17	74.36	25	171.86	35	62.71	11	98.75	10	80.9	15	15
P05-26	11.06	8	41.95	23	91.93	9	201.12	22	62.25	16	65.06	3	89.2	2	5
P05-27	11.22	13	41.29	22	84.85	14	217.52	12	63.89	2	199.24	29	76.9	25	13
P05-28	11.47	19	42.22	25	80.55	18	194.22	26	61.39	25	180.93	25	80.1	16	27
P05-29	11.22	13	42.64	26	94.88	7	213.81	16	63.14	9	96.15	9	87.3	5	6
P05-30	11.53	21	42.94	28	81.33	17	214.41	15	62.27	15	212.24	30	73.4	29	29
P05-31	12.40	33	45.79	32	88.32	11	261.32	2	61.82	20	177.88	24	78.6	21	22
P05-32	10.89	6	46.88	33	95.48	5	216.33	14	62.71	11	142.27	18	82.0	12	10
P05-33	10.40	2	45.04	30	84.33	15	208.49	20	64.34	1	243.20	32	82.1	11	12
P05-34	11.45	18	51.31	35	115.20	1	261.72	1	63.39	8	94.54	8	85.6	6	2
P05-35	11.10	9	44.79	29	74.74	24	216.82	13	58.03	34	183.76	26	55.1	36	32
P05-36	12.62	37	49.41	34	69.93	29	202.36	21	57.93	35	167.10	21	62.3	34	37
		#N/A		37		#N/A		#N/A		#N/A		#N/A		#N/A	#N/A
		#N/A		37		#N/A		#N/A		#N/A		#N/A		#N/A	#N/A
		#N/A		37		#N/A		#N/A		#N/A		#N/A		#N/A	#N/A
		#N/A		37		#N/A		#N/A		#N/A		#N/A		#N/A	#N/A
Min. value	10.24		29.72		48.99		167.35		54.55		34		51.90		
Max. value	12.62		54.90		115.20		261.72		64.34		290		89.60		
Average	11.48		40.06		79.99		209.32		61.55		153		77.22		

PRELIM 6 KERNEN LOCATION 6-ROW

NOVEMBER 25,2005

TRT#	PEDIGREE	PROTEIN	ALPHA CONV	DP	BETA GLUCAN	FAN	EXTRACT 70oC	FRIAB
TRADITION-5		11.41	44.58	158.78	217.52	44.78	61.20	57.00
P06-1	Tradition	12.16	48.86	195.65	212.37	45.83	61.64	51.90
P06-2	CDC Battleford	11.29	80.22	201.11	60.63	48.19	63.68	83.30
P06-3	ZDM5236/BT478	11.84	78.28	213.26	57.00	48.22	61.61	85.20
P06-4	BT 962/BT474	11.96	74.11	213.00	68.38	49.63	62.07	80.50
P06-5	BT 962/BT474	11.80	72.51	218.28	63.05	50.30	63.00	84.00
P06-6	6B97-2245/BT474	11.90	57.62	167.97	104.72	49.45	61.86	81.50
P06-7	6B97-2245/BT474	11.81	55.66	179.29	189.26	49.47	59.11	68.00
P06-8	6B98-9438/SM00177	11.92	70.01	224.48	132.37	51.39	63.23	76.70
P06-9	ZDM5238/CDC Yorkton	13.35	41.69	161.79	335.63	49.80	57.52	53.70
P06-10	S-037/BT478	12.43	65.98	187.35	183.83	54.07	61.41	74.30
P06-11	SM00174/BT478	11.77	76.38	267.95	68.08	56.68	65.28	84.50
P06-12	SM00174/BT478	11.33	70.02	224.71	144.81	56.01	60.48	64.40
P06-13	BA6B94-8253/BT484	11.74	58.68	222.07	292.98	54.71	60.94	72.10
P06-14	SM00201/SM00716	11.31	67.62	186.93	274.10	56.68	61.82	71.50
P06-15	SM00201/SM00716	11.27	103.16	244.03	214.30	60.41	64.35	75.40
P06-16	SM00177/SM00158	11.44	88.57	288.26	173.39	62.24	64.36	75.80
P06-17	SM00177/SM00158	11.66	84.36	266.57	188.33	62.59	62.97	76.10
P06-18	SM00223/BT474	11.55	74.18	262.44	253.47	66.07	61.37	69.90
P06-19	SM00223/BT474	12.26	63.43	205.79	92.32	48.56	63.19	77.20
P06-20	6B97-2063/SM00177	13.34	57.21	198.04	117.62	50.96	60.45	67.10
P06-21	6B97-2063/SM00177	11.09	70.72	203.29	92.97	52.13	62.05	81.30
P06-22	6B92-7098/BT478	12.58	67.93	227.82	127.83	52.60	60.70	74.60
P06-23	6B92-7098/BT478	11.84	70.59	204.63	67.04	51.04	62.99	73.30
P06-24	BT480/6B98-9789	11.80	78.77	213.26	86.94	52.50	61.37	80.40
P06-25	BT480/6B98-9789	11.76	60.77	212.13	105.75	52.93	60.92	64.70
P06-26	BT483/6B95-2089	11.84	61.57	248.17	154.91	53.50	60.90	64.50
P06-27	BT483/6B95-2089	11.47	68.72	234.62	82.32	56.06	60.67	76.60
P06-28	BT482/ND15477	11.71	67.31	266.27	168.79	58.25	58.04	68.10
P06-29	BT482/ND15477	11.75	67.19	281.49	117.82	59.72	60.22	73.60
P06-30	SM00207/SM00150	10.98	92.27	266.29	19.60	61.27	63.41	92.20
P06-31	SM00207/SM00150	10.79	79.88	249.19	64.92	60.98	63.43	84.60
P06-32	SM00156/SM00174	10.97	90.61	272.28	103.19	62.76	63.87	83.00
P06-33	SM00156/SM00174	11.67	104.6	311.55	70.48	65.42	62.49	85.30
P06-34	SM00210/BT962	10.92	75.44	267.44	217.64	65.50	62.76	70.70
P06-35	SM00210/BT962	11.32	109.37	303.77	131.03	69.17	64.36	83.30
P06-36	Legacy/BT474	11.10	130.95	305.95	30.20	77.70	62.52	94.50

KERNEN LOCATION

PRELIM 6

Entries	NIT PROTEIN		FAN %		α-Amyl. D.U.		DP °L		70°C Ext. %		β-glucan p.p.m.		Friab. %		GlobRk
TRADITION-5	11.41	12	44.78		44.58	36	158.78	37	61.20	26	218	32	57.00	35	32
P06-1	12.16	32	45.83	1	48.86	35	195.65	31	61.64	21	212	30	51.90	37	34
P06-2	11.29	8	48.19	2	80.22	9	201.11	29	63.68	6	61	4	83.30	8	3
P06-3	11.84	26	48.22	3	78.28	12	213.26	22	61.61	22	57	3	85.20	4	9
P06-4	11.96	31	49.63	7	74.11	16	213.00	24	62.07	17	68	9	80.50	13	14
P06-5	11.80	23	50.30	9	72.51	17	218.28	21	63.00	11	63	5	84.00	7	10
P06-6	11.90	29	49.45	5	57.62	32	167.97	35	61.86	19	105	16	81.50	11	22
P06-7	11.81	25	49.47	6	55.66	34	179.29	34	59.11	35	189	29	68.00	30	36
P06-8	11.92	30	51.39	12	70.01	21	224.48	19	63.23	9	132	22	76.70	16	18
P06-9	13.35	37	49.80	8	41.69	37	161.79	36	57.52	37	336	37	53.70	36	37
P06-10	12.43	34	54.07	18	65.98	27	187.35	32	61.41	23	184	27	74.30	22	33
P06-11	11.77	22	56.68	22	76.38	13	267.95	7	65.28	1	68	8	84.50	6	6
P06-12	11.33	11	56.01	20	70.02	20	224.71	18	60.48	32	145	23	64.40	34	24
P06-13	11.74	19	54.71	19	58.68	31	222.07	20	60.94	27	293	36	72.10	25	31
P06-14	11.31	9	56.68	22	67.62	24	186.93	33	61.82	20	274	35	71.50	26	28
P06-15	11.27	7	60.41	26	103.16	4	244.03	15	64.35	4	214	31	75.40	20	12
P06-16	11.44	13	62.24	29	88.57	7	288.26	4	64.36	2	173	26	75.80	19	11
P06-17	11.66	16	62.59	30	84.36	8	266.57	9	62.97	13	188	28	76.10	18	16
P06-18	11.55	15	66.07	34	74.18	15	262.44	12	61.37	24	253	34	69.90	28	26
P06-19	12.26	33	48.56	4	63.43	28	205.79	26	63.19	10	92	13	77.20	15	18
P06-20	13.34	36	50.96	10	57.21	33	198.04	30	60.45	33	118	18	67.10	31	35
P06-21	11.09	5	52.13	13	70.72	18	203.29	28	62.05	18	93	14	81.30	12	13
P06-22	12.58	35	52.60	15	67.93	23	227.82	17	60.70	30	128	20	74.60	21	25
P06-23	11.84	26	51.04	11	70.59	19	204.63	27	62.99	12	67	7	73.30	24	17
P06-24	11.80	23	52.50	14	78.77	11	213.26	22	61.37	24	87	12	80.40	14	15
P06-25	11.76	21	52.93	16	60.77	30	212.13	25	60.92	28	106	17	64.70	32	28
P06-26	11.84	26	53.50	17	61.57	29	248.17	14	60.90	29	155	24	64.50	33	30
P06-27	11.47	14	56.06	21	68.72	22	234.62	16	60.67	31	82	11	76.60	17	21
P06-28	11.71	18	58.25	24	67.31	25	266.27	11	58.04	36	169	25	68.10	29	27
P06-29	11.75	20	59.72	25	67.19	26	281.49	5	60.22	34	118	19	73.60	23	23
P06-30	10.98	4	61.27	28	92.27	5	266.29	10	63.41	8	20	1	92.20	2	1
P06-31	10.79	1	60.98	27	79.88	10	249.19	13	63.43	7	65	6	84.60	5	4
P06-32	10.97	3	62.76	31	90.61	6	272.28	6	63.87	5	103	15	83.00	10	5
P06-33	11.67	17	65.42	32	104.6	3	311.55	1	62.49	16	70	10	85.30	3	8
P06-34	10.92	2	65.50	33	75.44	14	267.44	8	62.76	14	218	33	70.70	27	20
P06-35	11.32	10	69.17	35	109.37	2	303.77	3	64.36	2	131	21	83.30	8	7
P06-36	11.10	6	77.70	36	130.95	1	305.95	2	62.52	15	30	2	94.50	1	2
Min. value	10.79		44.78		41.69		158.78		57.52		20		51.90		
Max. value	13.35		77.70		130.95		311.55		65.28		336		94.50		
Average	11.71		55.88		73.78		231.24		61.95		137		75.16		

2005

PRELIM 7 KERNEN LOCATION

JANUARY 11,2006

6-ROW

TEST	LOC	ENTRY	PEDIGREE	PROTEIN	ALPHA	DP	BETA	FAN	70oC EXTRACT	FRIAB
TRADITION				11.40	48.24	180.39	113.70	26.79	60.91	67.40
PMYT07	K	1	Tradition	12.80	47.51	205.41	185.27	25.61	59.08	47.60
PMYT07	K	2	CDC Battleford	11.55	68.59	192.84	60.37	28.86	65.50	83.80
PMYT07	K	6	SM01198/SM01233	11.69	70.37	166.70	42.41	29.30	66.65	91.10
PMYT07	K	8	SM01262/SM01147	11.62	54.74	187.11	122.32	27.33	62.05	72.90
PMYT07	K	11	6B98-9025/SM00174	11.97	66.62	189.36	58.41	30.05	62.03	84.20
PMYT07	K	12	6B98-9025/SM00174	12.27	71.26	209.10	53.62	30.87	66.39	86.00
PMYT07	K	13	6B98-9025/SM00174	14.15	45.71	181.46	199.92	27.10	57.92	51.50
PMYT07	K	14	6B98-9025/SM00174	12.56	71.27	170.59	37.26	30.20	65.03	88.00
PMYT07	K	15	6B98-9025/SM00174	11.96	65.57	182.98	39.18	30.14	64.57	87.60
PMYT07	K	16	6B98-9555/BT479	13.51	51.58	174.87	75.09	27.93	54.51	58.30
PMYT07	K	17	6B98-9555/BT479	12.06	52.81	177.91	47.30	28.86	62.49	73.50
PMYT07	K	18	6B98-9555/BT479	11.82	64.25	180.29	48.92	30.09	62.25	85.10
PMYT07	K	19	6B98-9555/BT479	11.97	58.78	168.45	49.48	29.92	65.02	85.60
PMYT07	K	20	6B98-9555/BT479	12.00	51.12	175.45	70.20	28.22	64.56	69.70
PMYT07	K	21	6B98-9555/BT479	12.12	63.81	192.61	63.35	30.51	64.32	81.70
PMYT07	K	24	6B92-7166/SM00207	12.06	60.10	188.03	40.75	29.42	63.86	85.80
PMYT07	K	32	6B98-9030/BT477	12.68	62.82	225.94	57.26	30.65	65.71	81.30
PMYT07	K	34	6B98-9030/BT477	12.05	55.09	179.97	91.89	29.37	63.17	79.70
PMYT07	K	36	6B98-9030/BT477	11.93	57.53	176.98	67.56	29.98	65.48	83.60
TRADITION				11.40	50.36	183.48	116.11	29.54	60.91	67.40

[redacted]E: JA[redacted]Y 11[redacted] 2005 [redacted]ROW[redacted]
KERNEN LOCATION PRELIM 7 1-36

Entries	LOC	ENTRY	NIT PROTEIN		FAN %		α-Amyl. D.U.		DP °L		70°C Ext. %		β-glucan p.p.m.		Friab. %		GlobRk
TRADITION			11.40	1	26.79		48.24	19	180.39	12	60.91	18	113.70	17	67.40	17	15
PMYT07	K	1	12.80	19	25.61	1	47.51	20	205.41	3	59.08	19	185.27	20	47.60	21	19
PMYT07	K	2	11.55	3	28.86	6	68.59	4	192.84	4	65.50	4	60.37	11	83.80	9	1
PMYT07	K	6	11.69	5	29.30	8	70.37	3	166.70	21	66.65	1	42.41	4	91.10	1	2
PMYT07	K	8	11.62	4	27.33	3	54.74	14	187.11	8	62.05	15	122.32	19	72.90	15	12
PMYT07	K	11	11.97	9	30.05	14	66.62	5	189.36	6	62.03	16	58.41	10	84.20	8	7
PMYT07	K	12	12.27	16	30.87	20	71.26	2	209.10	2	66.39	2	53.62	8	86.00	4	4
PMYT07	K	13	14.15	21	27.10	2	45.71	21	181.46	11	57.92	20	199.92	21	51.50	20	21
PMYT07	K	14	12.56	17	30.20	17	71.27	1	170.59	19	65.03	6	37.26	1	88.00	2	6
PMYT07	K	15	11.96	8	30.14	16	65.57	6	182.98	10	64.57	8	39.18	2	87.60	3	3
PMYT07	K	16	13.51	20	27.93	4	51.58	16	174.87	18	54.51	21	75.09	15	58.30	19	20
PMYT07	K	17	12.06	13	28.86	6	52.81	15	177.91	15	62.49	13	47.30	5	73.50	14	14
PMYT07	K	18	11.82	6	30.09	15	64.25	7	180.29	13	62.25	14	48.92	6	85.10	7	7
PMYT07	K	19	11.97	9	29.92	12	58.78	11	168.45	20	65.02	7	49.48	7	85.60	6	10
PMYT07	K	20	12.00	11	28.22	5	51.12	17	175.45	17	64.56	9	70.20	14	69.70	16	16
PMYT07	K	21	12.12	15	30.51	18	63.81	8	192.61	5	64.32	10	63.35	12	81.70	11	13
PMYT07	K	24	12.06	13	29.42	10	60.10	10	188.03	7	63.86	11	40.75	3	85.80	5	5
PMYT07	K	32	12.68	18	30.65	19	62.82	9	225.94	1	65.71	3	57.26	9	81.30	12	9
PMYT07	K	34	12.05	12	29.37	9	55.09	13	179.97	14	63.17	12	91.89	16	79.70	13	16
PMYT07	K	36	11.93	7	29.98	13	57.53	12	176.98	16	65.48	5	67.56	13	83.60	10	11
TRADITION			11.40	1	29.54	11	50.36	18	183.48	9	62.02	17	116.11	18	67.40	17	18
Min. value			11.40		25.61		45.71		166.70		54.51		37		47.60		
Max. value			14.15		30.87		71.27		225.94		66.65		200		91.10		
Average			12.17		29.08		58.96		185.23		63.02		78		76.75		